

TMR SENSOR WITH OXIDIZED ALLOY BARRIER LAYER AND  
METHOD OF FORMING THE SAME  
ABSTRACT OF THE DISCLOSURE

5 A tunneling magnetoresistive stack includes a first ferromagnetic layer, a tunnel barrier layer on the first ferromagnetic layer, and a second ferromagnetic layer on the tunnel barrier layer. The tunneling magnetoresistive stack exhibits a negative exchange coupling between the first ferromagnetic layer and the second ferromagnetic layer indicating that the tunneling magnetoresistive stack has a high quality tunnel barrier layer.